IN THE CLAIMS:

Please amend claims 1-20 as follows:

1. (Amended) A tunable external cavity waveguide device, said waveguide device comprising:

a ferroelectric electro-optical substrate;

a waveguide formed in said substrate by a strain field induced therein;

a distributed Bragg reflector (DBR) disposed adjacent a portion of said waveguide; and

means for applying a voltage difference across said distributed Bragg reflector.

a'

2. (Amended) A tunable external cavity waveguide device according to claim 1 wherein said substrate has an electro-optic coefficient of no less than r_{33} = 240 pm/V and a strain-optic coefficient which is positive.

3. (Amended) A tunable external cavity waveguide device according to claim 2 wherein said substrate has a strain-optic coefficient in the range of about 0.1.

4. (Amended) A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises SBN.

5. (Amended) A tunable external cavity waveguide device according to claim 4 wherein said substrate comprises SBN:61.

6. (Amended) A tunable external cavity waveguide device according to claim 4 wherein said substrate comprises SBN:75.

a' cont.

7. (Amended) A tunable external cavity waveguide device, according to claim 3 wherein said substrate comprises PLZT.

8. (Amended) A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises $LiNbO_3$.

9. (Amended) A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises $LiTaO_3$.

10. (Amended) A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises $BaTiO_3$.

11. (Amended) A tunable external cavity waveguide device according to claim 1 wherein said substrate has an index of

refraction, wherein said waveguide is formed in said substrate by inducing a compressive strain field within said substrate, and wherein said compressive strain field forms graduated variations in the index of refraction of said substrate.

12. (Amended) A tunable external cavity waveguide device according to claim 11 further comprising a layer of material deposited on said substrate, said layer of material having a different coefficient of thermal expansion than said substrate, and said compressive strain field induced by said layer of material applied to said substrate at an elevated temperature and then allowed to cool to a reduced temperature.

a/ cont.

13. (Amended) A tunable external waveguide device according to claim 12 wherein said substrate comprises a flat surface, and wherein said waveguide device further comprises and said layer of material deposited onto said flat surface, and a channel formed in said layer of material at said reduced temperature.

14. (Amended) A tunable external cavity waveguide device according claim 12 wherein said substrate comprises a ridge projecting out of a flat surface, and wherein said wavelength

said wavelength device further comprises said layer of material deposited onto said flat surface adjacent said ridge.

15. (Amended) A tunable external cavity waveguide device according to claim 1 wherein said substrate comprises a ridge projecting out of a flat surface, and wherein said waveguide device further comprises a layer of material deposited onto said ridge, said layer of material having a larger index of refraction than said substrate.

16. (Amended) A tunable external cavity waveguide device according to claim 1 wherein said substrate comprises a flat surface, and said waveguide device further comprises a layer of material deposited onto said flat surface, said layer of material comprising a ferroelectric electro-optical material having a larger index of refraction than said substrate.

a' cont.

17. (Amended) A tunable external cavity waveguide device according to claim 1 wherein said waveguide device further comprises phase control means for selecting a cavity mode.

18. (Amended) A tunable external cavity waveguide device according to claim 17 wherein said phase control means comprise

means for applying a voltage difference across a portion of said waveguide.

19. (Amended) An external cavity mirror disposed relative to a semiconductor laser for directing a portion of the emitted laser light back into an optically active region of said semiconductor laser, said external cavity mirror comprising a substrate comprising a ferroelectric electro-optical material, a waveguide disposed in said substrate by a strain field induced therein, and an electro-optically tunable distributed Bragg reflector (DBR) disposed adjacent a portion of said waveguide, wherein said portion of emitted laser light is directed back into said optically active region of said semiconductor laser as a function of a pre-determined external voltage difference selectively applied across said distributed Bragg reflector (DBR).

A1 cont.

20. (Amended) A semiconductor laser comprising:

an active section of a diode which emits light over a bandwidth around a given center frequency;

an external cavity mirror bounding one end of said active section; and

a partially reflective mirror bounding an opposite end of said active section;

said external cavity mirror being disposed relative to said active section for directing a selected portion of said light back into said active section, said external cavity mirror comprising a substrate comprising:

a ferroelectric electro-optical substrate;

a waveguide formed in said substrate by a strain field induced therein;

a distributed Bragg reflector (DBR) formed on said substrate; and

means for applying a voltage difference across said external cavity mirror.

a/ cont.

Remarks

In the outstanding Official Action, the Examiner:

(1) rejected claims 1-20 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention; and

(2) rejected claims 1-11 under the judicially created doctrine of double patenting over claims 1-10 and 17 of U.S. Patent No. 6,041,071 since claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.